Abstract

ABSTRACT

BACKGROUND

Inflammation of the gingiva is a hallmark clinical sign for the initiation of chronic periodontal disease. Angiogenesis plays a vital role in the formation of new blood cells and in the recruitment of inflammatory cells to the site of disease progression, thereby exhibiting a close link between inflammation in chronic and acute inflammatory periodontal diseases. It has been proven over years that the process of angiogenesis initiates with the presence of proangiogenic factors that stimulates the formation of microcapillary vessels. It is evident that proangiogenic cytokines Ang 1, Ang 2 and HGF play an important role in the inflammation and in the process of remodeling in periodontal tissues. This study aims to evaluate the mRNA/ gene expression of Ang 1, Ang 2 and HGF proangiogenic factors in periodontally healthy individuals and in patients with chronic periodontitis.

MATERIALS AND METHODS

20 gingival samples were obtained from each group of patients (Group A: periodontal health; Group B: periodontal disease). The samples were then evaluated for the expression of mRNAs of Ang 1, Ang 2 and HGF by real time reverse transcription polymerase chain reaction (Q RT-PCR).

RESULTS:

The results of our present study demonstrated an up regulation in the expression Ang 1 and HGF gene in the diseased samples and a down regulation in the expression of Ang 2 gene in diseased samples which was statistically insignificant (p=0.129, p=0.934 and p= 0.899) for Ang 1, Ang 2 and HGF respectively.

CONCLUSION:

To conclude the constitutive expression of Ang 1, Ang 2 and HGF proangiogenic factors in the gingival tissues of periodontal health reaffirms their role in periodontal homeostasis, while their dysregulation in periodontal disease suggests a potential pathogenic role. Further studies targeted towards mechanism of action are required to elicit their exact role in the etiopathogenesis of periodontal disease.

Keywords:

Periodontal disease, Angiogenesis, Angiopoietin 1, Angiopoietin 2, Hepatocyte Growth Factor, Real time RT- PCR.